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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/691,811	10/19/2000	Stanley W. Olson	BERG-2550/C2719	5391

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John P Donohue Jr Esq
Woodcock Washburn Kurtz
Mackiewicz & Norris LLP
One Liberty Place - 46th Floor
Philadelphia, PA 19103

EXAMINER

ABRAMS, NEIL

ART UNIT	PAPER NUMBER
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2839

DATE MAILED: 01/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

07/691811

Applicant(s)

Examiner

27/12/81

Group Art Unit

2839

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 10-9-01 (c/m 10-5)
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-6, 8-14, 12-20, 25-41 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-6, 8-14, 12-20, 25-41 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☒ The proposed drawing correction, filed on 10-9-01 is ☒ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

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Title should be changed to -- Self - Centering Electrical Connector with Hold-Down Post --, *or equivalent.*

Parent case paragraph and page 6, lines 17, 29, must be updated when possible.

Claim 15 lines 2, 3, 5 terms "contacts" and "pads" must be modified for consistency as to singular or plural. All other claims should be reviewed and similar errors corrected .

The abstract is objected to as confusing and repetitions and should be entirely rewritten on a separate page. Numerals keyed to invention features could be used. It should refer to -- alignment posts (323) loosely fitted into solder filled circuit board holed (328) so that during reflow solder ball surface tension will cause the solder balls to center or align themselves on the circuit board pads, the solder (329) in holes (328) then hardening so that the posts ^{act} ~~as~~ hold downs. The posts may include shoulders 526 to prevent flattening of solder balls. The connector may include a main part 301 and a solder ball supporting wafer 311 latched to the part 301. Portions 701, 702 of the housing may be removed to allow the housing mass to be evenly balanced over the solder ball array --.

Above suggested changes to title and abstract should be modified for clarity and accuracy.

In current abstract, lines 11-14 are particularly unclear.

¹⁻²⁰
Claims ~~20~~ and 25-41 are rejected under 35 U.S.C. 102() as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gaudenzi alone or taken in view of LaVasco and Dozier.

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For claim 1, see Gaudenzi fig. 7, 8 solder balls 56 and hold down pin 58, the pin being sized to permit the solder balls to self align on pcb 60. While the reference is adequate alone, also obvious that such solder balls would ~~tend~~¹² to self-align as disclosed by Dozier, col. 26, lines 1-9 and as discussed by applicant in the spec. Page 2. Claim 4 defines no structural features over that of Gaudenzi. For claims 6, 9, note that Gaudenzi discusses use of pins with standoffs, col. 6, lines 20-25 and LoVasco figs. 2, 4¹² discloses use of standoffs.

It therefor would have been obvious to add such standoff parts to pins 58 to prevent undue flattening of solder balls.

Claims 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dozier in view of LoVasco.

The Dozier pins 350 lack standoff structure. Obvious to add such features in view of LoVasco qat 26, 27. This would help to prevent flattening of solder balls.

drop Claims 1-20 and 25-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dozier in view of Nishiguchi.

Obvious to form Dozier fig. 3 housing without pins 250 and with solder bumps like those of Nishiguchi fig. 6 at 2a, 2b with those at 2a read as hold downs, since to be soldered to the pcb and also as standoffs (claims 6, 25, etc) since they serve to space component 1 from pcb 3. Bumps 2a are also readable as non-surface mount" means as broadly stated.

Claims 1-20 and 25-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dozier in view of Gaudenzi and LoVasco.

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Obvious to omit pins 350 and to form Dozier fig. 3 with posts like those of Gaudenzi at 56 to be soldered to the pcb 302. LoVasco applied as above.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to N. Abrams at telephone number (703) 308-1729.

Abrams/ds

12/29/01


N. ABRAMS